



Near-Infrared (0.9 - 1.7 μm) 1280x1024 InGaAs Focal Plane Array

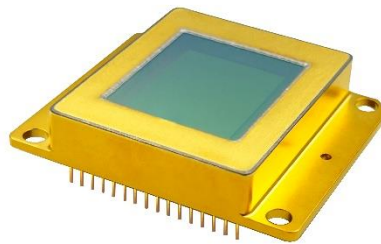
FPA1280P15L-17-T2: with 2-Stage Thermoelectric Cooler

FEATURES

- 1280x1024 Array Format
- 0.9 μm -1.7 μm Spectral Range
- 28-pin Metal SDIP Package
- Embedded Thermoelectric Cooler
- Typical Pixel Operability >99.5%
- Quantum Efficiency >70%
- Built-in Temperature Sensor
- Snapshot ITR/IWR and IMRO Readout Modes
- 2, 4 or 8 Outputs with up to 22MHz Pixel Rate
- Windowing Capability

APPLICATIONS

- Near-Infrared Imaging
- Covert Surveillance
- Semiconductor/Solar Panel Inspection
- Medical Science and Biology
- Fiberoptic Telecommunication
- See through Fog / Smoke
- Ice / Slush / Moisture Mapping
- Industrial Thermal Imaging
- Astronomy and Scientific



GENERAL DESCRIPTIONS

PARAMETER	UNIT	VALUE
Sensor Technology	---	Planar InGaAs PIN
Spectral Range	μm	0.9 -1.7
Actual Pixel Array	---	1280 x 1024
Pixel Pitch	μm	15
Image Size	mm	19.20 x 15.36
Package Type	---	32-pin Metal SDIP Package
Package Size L x W x T	mm	45.7 x 38.1 x 8.0 (without pins)
Weight	g	38.0 (± 0.5)

SPECIFICATIONS (¹ITS = 20°C)

Parameter		Unit	Typical Value	Conditions
^{2,3} Dark Current		fA	≤ 50	Photopixel Biased @ -0.5 V Mean Value
^{2,3} Quantum Efficiency * Fill Factor (QE _{EFF})		%	≥ 70	λ = 1.0 μm - 1.6 μm
^{2,3} Response Nonuniformity		%	≤ 10	At 50% Well Occupation
^{2,3} Response Nonlinearity (Max. Peak-to-Peak Deviation)		%	≤ 4	15% - 85% Well Occupation Range
Charge Capacity	@High Gain	μV/e ⁻	53.3	ROIC Specifications
	@Mid Gain		16	
	@Low Gain		1	
⁴ Readout Noise Floor		e ⁻	< 40	In High Gain Mode
Output Swing		V	1.8	
³ Minimum Integration Period		μs	< 1	
^{2,4} Pixel Operability		%	≥ 99.5	Percentage of Pixels with QE _{EFF} Deviation within ±30%*(QE _{EFF} Mean).
⁵ Maximum Cooling Capability (ΔT _{MAX})		°C	≥ 55	T _{Heatsink} = 20°C.

1. Readings from integrated temperature sensor (ITS).

2. These items are defined for central effective pixel array (1280x1024). Their values correspond to default operation conditions.

3. Contact us for further information.

4. FPA with pixel operability lower than 99.5% (<99.5%) is categorized as a test-grade device, which, if available in stock, can be provided on request.

5. Adequate heatsink and thermal interface material are the prerequisites for stable operation.

ABSOLUTE MAXIMUM RATINGS

Parameter	Unit	Min.	Max.
⁶ Operating Temperature	°C	-40	+70
⁶ Storage Temperature	°C	-40	+70
⁷ Power Consumption	mW	---	500
⁸ TEC Bias	V	---	6.0
⁸ TEC Current	A	---	2.7

6. Non-condensing environment.

7. Without powering on the thermoelectric cooler.

8. Applied to Pin-1 for cooling operation. Operation above these maximum ratings causes excessive (local) heat accumulation and may result in permanent damage to the cooler.



PACKAGE OUTLINE (Unit: mm)

